

DESCRIPTIONS OF TWENTY-TWO NEW SPECIES OF FISHES  
COLLECTED BY THE STEAMER ALBATROSS, OF THE  
UNITED STATES FISH COMMISSION.

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IN THE study of the different collections of fishes from the *Albatross* explorations, by Doctor Jordan and the writer, certain aberrant specimens have been set aside for further comparison. All these specimens have been lately reexamined, and among them 14 species are found which seem to be new to science. These species are here described, each in the name of the person responsible for the determination and the description:

*List of species described.*

1. *Tachysurus liopus*, S. B. Bristol. San Juan Lagoon, Sonora, Mexico.
2. *Netama insularum*, Flora Hartley Greene. Galapagos Archipelago.
3. *Leuresthes crameri*, Jordan and Evermann. Ballenas Bay, Lower California.
4. *Mugil thoburni*, Jordan and Starks. Galapagos Archipelago.
5. *Myripristis clarionensis*, Gilbert. Clarion Island.
6. *Centropomus constantinus*, Jordan and Starks. Bahia, Brazil.
7. *Epinephelus niphobles*, Gilbert and Starks. Magdalena Bay, Lower California.
8. *Orthopristis forbesi*, Jordan and Starks. Galapagos Archipelago.
9. *Ophioscion strabo*, Gilbert. San Juan Lagoon, Sonora, Mexico.
10. *Holacanthus iodocus*, Jordan and Rutter. Galapagos Archipelago.
11. *Xesurus clarionis*, Gilbert and Starks. Clarion Island, Mexico.
12. *Scorpena pannosa*, Cramer. Panama.
13. *Sebastodes semicinctus*, Gilbert. Santa Barbara Channel, California.
14. *Sebastodes ayresii*, Gilbert and Cramer. Cortez Banks, Mexico.
15. *Sebastodes crameri*, Jordan. Coast of Oregon.
16. *Prionotus lorias*, Jordan. Bay of Panama.
17. *Astroscopus zephyrius*, Gilbert and Starks. Magdalena Bay, Lower California.
18. *Emmion bristolae*, Jordan. Galapagos Archipelago. (EMMNION, new genus.)
19. *Utricula sancta-rosa*, Gilbert and Starks. Santa Cruz Island, California. (ULVICOLA, new genus.)
20. *Emblemaria oculocirris*, Jordan. La Paz Harbor.
21. *Lepidion verecundum*, Jordan and Cramer. Clarion Island.
22. *Paralichthys woolmanni*, Jordan and Williams. Galapagos Archipelago.

## Family SILURIDÆ.

TACHYSURUS LIROPUS, S. B. Bristol, new species.

Allied to *Tachysurus melanopus* (Günther).Head  $3\frac{3}{7}$  to  $3\frac{3}{4}$ ; depth  $4\frac{2}{5}$  to  $5\frac{1}{10}$ ; dorsal I, 6; anal 2, 19; pectorals I, 9 or 10.

Body elongate, its width anteriorly a little less than depth; the posterior portion much compressed; the back elevated at front of dorsal; anterior profile from front of dorsal to tip of snout oblique. Head flat, very broad, its width  $1\frac{1}{2}$  in its length. Snout broad, rounded,  $1\frac{1}{10}$  to  $1\frac{1}{6}$  in interorbital width. Eye rather large, laterally placed, its width about  $1\frac{3}{5}$  in its length,  $4\frac{1}{6}$  to  $4\frac{3}{10}$  in head. Mouth small, upper jaw considerably projecting, its breadth  $2\frac{3}{5}$  to 3 in head. Jaws thin; wide bands of minute pointed teeth present on both jaws. Vomerine bands widely separated and indistinguishable from the palatine band, which is small, oblong-ovate and scarcely prolonged backward; interval separating vomerine bands about  $2\frac{1}{2}$  or 3 in eye; the teeth on these bands larger than those on jaws, and very bluntly conical. Interorbital space broad,  $2\frac{1}{2}$  to 3 in head. Barbels long and slender, the maxillary barbel extending to, nearly to, or, in some cases, past base of pectoral,  $1\frac{1}{11}$  to  $1\frac{2}{5}$  in head; outer mental barbel  $1\frac{1}{2}$  to  $1\frac{3}{4}$  in head; inner mental barbels  $2\frac{1}{3}$  to  $2\frac{5}{6}$  in head. Dorsal shield very short, narrowly crescent-shaped; its length on the median line about 2 or 3 in its width. Occipital process subtriangular, a little longer than broad at base; its edge slightly concave; its median keel strong. The long, narrow groove of the fontanelle beginning abruptly a short distance in front of occipital keel, the distance from its end to base of dorsal  $1\frac{3}{5}$  to 2 in the distance to tip of snout. Shields of head rather smooth, finely granular, the granules forming distinct lines anteriorly. The flat area between eyes triangular, with a median groove extending from fontanelle forward to tip of snout; its posterior end a little behind eye, the granulations on each side of it extending forward as far as posterior border of pupil. Opercles with no radiating striae. Gill membranes forming a very narrow fold across the isthmus. Gill rakers 5+12. Nostrils large, placed close together and near tip of snout; the posterior with large flap. Axillary pore small, but evident, much smaller than nostrils. Humeral process smooth, short, 4 to  $5\frac{1}{2}$  in pectoral spine. Base of dorsal  $2\frac{3}{5}$  to  $2\frac{9}{10}$  in head; dorsal spine long and very strong,  $1\frac{1}{7}$  to  $1\frac{1}{3}$  in head, its upper anterior serræ small and tubercle-like; its upper posterior and its lower edges retrorsely serrate; the soft rays extending considerably beyond the spine,  $1\frac{1}{6}$  to  $1\frac{1}{4}$  in head. Adipose fin small, its base  $3\frac{1}{2}$  to  $4\frac{1}{2}$  in head, its height  $1\frac{2}{3}$  to 2 in its base. Caudal widely forked, the upper lobe, measured from base of caudal to its tip, the longer, about  $1\frac{1}{4}$  in head. Base of anal  $1\frac{3}{5}$  to  $1\frac{7}{8}$  in head, its longest ray  $2\frac{1}{8}$  to  $2\frac{1}{4}$  in head. Ventrals reaching five-sixths to seven-eighths the distance to origin of anal; vent about midway between origin of ventrals and origin of anal.

Pectoral spine  $1\frac{1}{2}$  in head, serrate, the serræ on inner edge larger and sharper than those on outer, the upper anterior serræ tubercle-like; the rays a little longer than spine. Bluish silvery, light yellowish below; top of head and back brown. Fins dusky olive, lighter at base; all margined with darker; ventrals not black; similar in color to other fins; adipose fin covered with minute black dots. Maxillary barbels dark brown, with bluish silvery luster; other barbels lighter. Eye yellowish. Length  $7\frac{1}{4}$  to 9 inches.

*Type*.—No. 47584, U.S.N.M.

Six specimens from San Juan Lagoon, near the mouth of Rio Ahome, Sonora, Mexico.

NETUMA INSULARUM, Flora Hartley Greene, new species.

Head in length  $3\frac{2}{3}$ ; width of head in length  $4\frac{2}{3}$ ; interorbital space in length 7; interorbital space in head scarcely 2; snout in head 3; breadth of mouth in head 2; eye in head  $6\frac{2}{3}$ ; dorsal I, 7; anal 17.

Head much broader than deep; snout depressed and broadly rounded; eye above the level of the mouth. Upper jaw projecting. Teeth on vomer and palatines villiform and bluntly conical. The 2 vomerine patches forming together a band almost as long and slightly broader than the premaxillary band; the 2 sides separated by a narrow interspace. Palatine teeth well separated from the vomerine teeth and in 2 large triangular patches which extend backward over the pterygoid region. Each triangle has a sharp notch in its anterior side; its anterior-posterior length is twice its lateral width. Teeth of lower jaw in a narrower band than the upper jaw. Maxillary barbel extending to end of first third of the length of the pectoral spine; outer mental barbel to base of pectoral; inner mental barbel past gill opening,  $2\frac{1}{3}$  in head. Dorsal shield crescent-shaped, without median keel. Length on median line  $2\frac{2}{3}$  in distance between the horns of the crescent; 2 notches on its anterior side to meet the corresponding points from the occipital process. Occipital process broadly triangular, with the outer sides concave and 2 small projections at its posterior end. Median keel evident, rather short. Occipital process much broader at base than long; its length  $3\frac{1}{2}$  in head; posterior breadth 2 in length of process. Fontanelle broad and shallow, narrowed gradually posteriorly to a point halfway between snout and base of dorsal spine. A narrow line runs back from it the distance of a long diameter of the eye. Greatest width of the fontanelle equals the short diameter of the eye. Shields of the head granular striate, the striae evident and extending to the middle of the interorbital space, and on the side to meet the humeral process at the top of the gill opening. Opercles nearly smooth. Gill membranes forming a fold across the isthmus. Dorsal and pectoral spines crenulate in front and sharply retrorse serrate behind. Dorsal shorter than pectoral, which is  $1\frac{1}{3}$  in head. No axillary pore evident. Adipose fin long and low with posterior margin attached. Vent much nearer ventrals than anal.

*Color (in alcohol).*—Dark blue above, light blue on side, and white below; maxillary barbel dusky; fins all dusky.

*Type.*—No. 47577, U.S.N.M.

This species was collected by the *Albatross* in the Galapagos Archipelago, being part of the collection studied by Jordan and Bollman in 1889. It was recorded by them<sup>1</sup> as *Tachysurus clatturus* (var.?). Its relations to *Netuma clattura* are close, but its fins are larger and there are several differences in details of structure.

#### Family ATHERINIDÆ.

##### LEURESTHES CRAMERI, Jordan and Evermann.

Head  $4\frac{1}{5}$ ; depth  $5\frac{1}{5}$ ; eyes  $3\frac{3}{4}$ ; snout  $3\frac{1}{2}$ ; dorsal V-1, 8; anal 1, 21; scales 5-67-6.

Body slender, gently rounded above, narrowed below. Scales smooth, firm, closely imbricated, the membranous edge strongly serrate. Mouth, moderate, premaxillaries very protractile; maxillary short, not reaching eye. First dorsal over front of anal, much nearer base of caudal than tip of snout, or midway between base of caudal and gill opening. Color hyaline green, with a lateral silvery streak, plumbeous above, narrow, its width  $1\frac{1}{2}$  in eye, wider than one row of scales, covering one row and two half rows; body above lateral line covered with small brown specks; pectorals and caudal chiefly blackish; second dorsal with many black specks; anal and ventrals plain. Close to *Leuresthes tenuis*, from which it differs in the larger scales, smaller eye, shorter maxillary, and the much narrower lateral band. Length 5 inches. Ballenas Bay, Lower California, near Cape Abreojos. Several specimens collected by Dr. Charles H. Gilbert on the *Albatross*.

*Type.*—No. 47583, U.S.N.M.<sup>2</sup> Named for Frank Cramer, in recognition of his excellent work on the Scorpenidæ and Agonidæ.

This species is described as new in Jordan and Evermann, "Fishes of North and Middle America."

#### Family MUGILIDÆ.

##### MUGIL THOBURNI, Jordan and Starks, new species.

Head  $3\frac{1}{2}$  to  $3\frac{3}{4}$ ; depth 4; dorsal IV-7; anal III, 9; scales 44-15; orbit equal to snout,  $4\frac{1}{2}$  in head; uncovered part of eye 8 or 9 in head; interorbital  $2\frac{1}{2}$ ; first dorsal spine 2; soft dorsal and anal equal. the longest ray,  $2\frac{1}{3}$ ; ventrals 2 in head; pectorals  $1\frac{1}{3}$ .

Body moderately elongate; a very gentle curve from tip of snout to dorsal; ventral outline considerably curved, the curve uniform from chin to caudal peduncle. Head large, broadly rounded above; eye moderate, with a large adipose eyelid; mouth oblique, the maxillary

<sup>1</sup>Proc. U. S. Nat. Mus., XII, 1889, p. 179.

<sup>2</sup>Transferred from the Leland Stanford Junior University Museum where it was numbered 27.

reaching to front of orbit; upper lip rather thick; lower jaw with a knob at the middle which fits into an emargination in the upper, its angle more obtuse than a right angle; space on chin between mandibular bones, broad in front, acute behind, the subopercles meeting below. Teeth very minute, scarcely appreciable. Preorbital minutely serrated. Pectorals reaching about to middle of end of ventrals, not to spinous dorsal; spinous dorsal inserted above posterior end of ventral when fin is depressed; first spine of dorsal the longest; soft dorsal and anal similar, their margins incised; ventrals inserted behind middle of pectoral; soft dorsal and anal scaly, 23 scales before dorsal.

Color slaty, bluish above, silvery below; sides with rather faint longitudinal bluish stripes which follow the rows of scales, fading out on the belly and running into the darker color on the back; ventrals and anal pale; pectoral and dorsals dusky; a dusky bar at base of pectoral.

*Type*.—No. 47576, U.S.N.M.<sup>1</sup> Two specimens, the largest 8 inches long, collected by the *Albatross* in the Galapagos. Close to *Mugil incilis*, the head larger, and with several minor differences. The species is named for Dr. Wilbur W. Thoburn, of Leland Stanford Junior University. It appears as a new species in "Fishes of North and Middle America," by Jordan and Evermann.

#### Family HOLOCENTRIDÆ.

MYRIPRISTIS CLARIONENSIS, Gilbert, new species.

(Plate LXIX.)

Differing from all known American species of *Myripristis* in having  $3\frac{1}{2}$  series of scales between the lateral line and the base of the spinous dorsal, instead of  $2\frac{1}{2}$ . The scales are comparatively small (41 in the course of the lateral line). The color is dusky red, without black bars or any sharp markings.

Head  $3\frac{1}{8}$  in length; depth  $2\frac{5}{8}$ . Least depth of caudal peduncle half length of snout and eye. Greatest (oblique) diameter of eye  $2\frac{1}{2}$  in head. Least interorbital width equaling length of snout,  $4\frac{1}{2}$  in head. Mouth less oblique than in related species, the line of upper jaw with a more pronounced double curve. Lower jaw the longer, with well-developed symphyseal knob. Teeth finely villiform, very slightly enlarged toward middle of both jaws. Wide patches of similar teeth on head of vomer and on palatine bones. Length of maxillary (measured from front of upper jaw) very slightly (about one-twentieth) less than length of snout and eye. D. X-I, 14; A. IV, 12. Scales  $3\frac{1}{2}$ -41-7.

Color before immersion in spirits, reddish, the upper parts dusky, especially on top of head and on the margins of the scales. Evident horizontal dusky streaks between the rows of scales. Opercular membrane blackish. Fins all light, without dark markings.

*Type*.—No. 47746, U.S.N.M.

<sup>1</sup>Transferred from Leland Stanford Junior University Museum, where it was numbered 1607.



One specimen,  $6\frac{1}{4}$  inches long, from Clarion Island, of the Revilla-Gigedo group, Mexico. It had been captured by a booby bird, but was still in good condition when taken by us.

### Family CENTROPOMIDÆ.

#### CENTROPOMUS CONSTANTINUS, Jordan and Starks.

Head  $2\frac{3}{4}$ ; depth  $3\frac{1}{2}$ ; eye 5 in head; snout  $3\frac{1}{2}$ ; interorbital two-thirds eye; dorsal VIII-I, 10; anal III, 7; scales 10-67-13. Posterior half of preorbital rather strongly retrorse-serrate, anterior portion entire; maxillary extending to below the middle of orbit,  $2\frac{1}{3}$  in head; subopercular flap ending nearly to within 4 scales of the vertical from the origin of dorsal. Gill rakers 4+9. 21 series of scales before first dorsal. Third and fourth dorsal spine equal, about half as long as head; second anal spine longer and much stronger than third,  $1\frac{2}{3}$  in head, the third longer than the soft rays; ventrals long,  $1\frac{1}{8}$  in head, nearly reaching vent, their length not quite equal to distance from their tips to anal. Air bladder with very short, blunt, anterior appendages, which are not more than half the length of the pupil. Pectorals 2 in head; caudal short, with roundish lobes, 2 in head. Olive; sides silvery; lateral line dusky; head pale; ventrals pale; tips of dorsal and membrane behind anal spines blackish. Known from 3 specimens collected at Bahia, Brazil, by the *Albatross*.

*Type*.—No. 43289, U.S.N.M. The description is drawn from a specimen  $8\frac{1}{4}$  inches long, in the Leland Stanford Junior University Museum, No. 1633.

This species appears as new in Jordan and Evermann, "Fishes of North and Middle America."<sup>1</sup>

### Family SERRANIDÆ.

#### EPINEPHELUS NIPHOBLIS, Gilbert and Starks, new species.

Head  $2\frac{2}{5}$  in body; depth  $2\frac{1}{2}$ ; dorsal XI-14; anal III, 9; scales 16-116-40; eyes 5 in head; maxillary 2; third dorsal spine  $2\frac{2}{3}$ ; middle dorsal rays  $2\frac{1}{2}$ ; highest anal rays 2; third anal spine  $3\frac{1}{10}$ ; pectoral  $1\frac{5}{6}$ ; ventrals  $1\frac{3}{4}$ ; caudal  $1\frac{3}{4}$ .

Form rather robust, moderately compressed; dorsal outline uniformly curved from tip of snout to caudal peduncle; mouth large, the maxillary reaching to below posterior orbital rim; lower jaw strongly projecting; teeth conical and sharp, in one or two bands at sides of jaws, three or four in front; upper jaw with a rather strong canine on each side of front; snout longer than eye; nostrils close together, the posterior one the larger, a little in front of the vertical from front of eye, the anterior in a short, wide tube with a flap behind; vertical and horizontal limbs of preopercle meeting at right angles, its edge with blunt serræ, those at

<sup>1</sup> See Volume I, p. 1125; published October 3, 1896.

angle enlarged; opercle with 3 flat spines before the flap; gill rakers moderate, nearly half eye, 8+16 in number. Top of head, orbitals, maxillary, and mandibles, naked; fine scales on cheeks and opercles; scales on body ctenoid; fins without scales. Dorsal beginning a little in front of the vertical from pectoral base, the third spine a little the highest, but the ones behind it not much shortened; soft dorsal higher than spinous, its outline rounded; pectoral rounded behind, reaching to below the base of eighth dorsal spine; third anal spine the longest, not nearly so long as the soft rays, the anal fin similar in shape to the soft dorsal; ventrals reaching past vent, scarcely to front of anal, their ends rounded, as are all the fins; caudal broadly rounded. Color in spirits brownish red, sides with clear-cut, distinct, white spots about as large as pupil, about 6 at base of dorsal, 6 or 7 along lateral line, following its arch, a horizontal series of 4 extending back from opercular flap, about 3 from base of pectoral following curve of ventral outline, two at base of anal, one behind lower edge of caudal peduncle and one above anus; a well-marked streak above maxillary following its outline; lips colored like rest of head; dorsal dusky, with vague white spots; ventrals and anal nearly black, with a reddish tinge; anal with a narrow white border below; pectoral and caudal uniform yellowish.

*Type*.—No. 47582, U.S.N.M.

A single specimen, 6 inches in length, collected by the *Albatross* at station 3041, in Magdalena Bay, Lower California.

The species is allied to *Epinephelus niveatus* of the Atlantic.

#### Family HEMULIDÆ.

##### ORTHOPRISTIS FORBESI, Jordan and Starks, new species.

Head  $3\frac{1}{2}$ ; depth 3; dorsal XII or XIII, 15; anal III, II; scales 9–80 to 85–20; snout  $2\frac{2}{3}$ ; maxillary  $3\frac{1}{2}$ ; orbit  $4\frac{1}{4}$ ; longest dorsal spine  $2\frac{1}{3}$ ; second anal spine  $3\frac{1}{2}$ ; pectoral  $1\frac{1}{4}$ ; ventrals  $1\frac{2}{3}$ ; upper caudal lobe  $1\frac{1}{3}$ .

Body oblong, compressed, the profile gently curved to dorsal. Head moderate, the jaws subequal; teeth small, the outer a little enlarged; maxillary extending to the vertical from posterior nostril; chin with a median pit; interorbital convex, its width about equal to orbit; vertical limb of preopercle slightly convex, finely serrated; gill rakers short, about 8+14=22; preorbital moderate,  $3\frac{2}{3}$  in head, 3 in its least width. Snout, maxillary, and lower jaw naked; scales on head small and crowded. Dorsal low, the longest ray about  $1\frac{1}{4}$  in the longest spine; second anal spine not longer than third, but slightly stouter, about half as long as the longest ray; pectorals moderate, reaching past tips of ventrals, but not to vent; upper lobe of caudal the longer; second anal spine moderate, about as long as third.

*Color (in alcohol)*.—Dark brown above, with bluish reflections; all fins dusky except pectorals; caudal edged with light, membrane of opercle dark; preopercle with some dark spots.

*Type*.—No. 47574, U.S.N.M. Named for Dr. Stephen Alfred Forbes, of the University of Illinois, in recognition of his work on the Percidae.

Two specimens, the type  $7\frac{1}{2}$  inches long, from Albemarle Island, one of the Galapagos Archipelago.

### Family SCIÆNIDÆ.

OPHIOSCION STRABO, Gilbert, new species.

(Plate L.)

Closely allied to *O. typicus*, having the same general shape and the elongate caudal which is longer than head. It differs conspicuously in its much smaller eye, its heavier, shorter snout, which barely protrudes beyond the mouth, and its longer, less numerous, preopercular spines.

Snout bluntly rounded, little projecting, the mouth short and broad compared with *O. typicus*. Anterior upper profile very concave, rising rapidly from occiput to dorsal, growing sharply compressed. Mouth moderately oblique, subterminal, the snout protruding beyond the premaxillaries for a distance (measured axially) equaling half diameter of pupil. Maxillary reaching slightly behind front of orbit,  $3\frac{1}{8}$  to  $3\frac{3}{8}$  in length of head. Mandibular teeth of equal size, in a wide villiform band. Premaxillary band similar, preceded by an outer row of short slender canines. Preorbital rather narrow, half interorbital width. Eyes small, obliquely set, the oblique diameter 4 to  $4\frac{1}{2}$  in length of head. Interorbital space transversely convex, its width  $3\frac{2}{3}$  in head. A low superciliary ridge. Preopercular margin with a few (4 to 6) slender needle-like spines, the three longer ones wide spaced, evenly radiating about the angle. Margin of lower limb furnished with 5 or 6 minute spinous teeth, compressed triangular, and flexible. Gill rakers short, slender, half diameter of pupil, 6 or 7 above angle, 12 below.

First two and last two dorsal spines rather strong and rigid, the others exceedingly slender and flexible. The third spine is the longest, reaching beyond base of tenth spine when depressed,  $1\frac{2}{3}$  to  $1\frac{3}{4}$  in length of head. The tenth spine is the shortest, the eleventh longer, representing the first ray of second dorsal. Distance from last dorsal ray to base of middle caudal ray equals length of snout and half of eye. Second anal spine long and slender, half or slightly more than half length of head, three-fourths or four-fifths the longest anal ray. Anal basis but little more oblique than the rest of the abdominal profile. Distance from base of last anal ray to base of middle caudal ray slightly exceeds distance from tip of snout to preopercular margin. Caudal lanceolate, the middle rays much produced, equaling distance from tip of snout to axil of pectorals. Pectorals short, scarcely reaching tips of ventrals, the latter not to vent. Outer ventral ray slightly produced beyond the rest.

Scales smaller than in *O. typicus*, 5 or 6 in the vertical series between lateral line and back. Arch of lateral line ending over the anterior portion of anal fin. Head almost entirely scaled, including mandible,



branchiostegal rays, preorbital, and top of head forward to near extreme tip of snout. On snout, preorbital and mandibles, the scales are cycloid.

*Color (in alcohol).*—Nearly uniform light brown, lighter below and with some silvery luster. Fins all dusky, the anal and ventrals black, the outer ventral ray white. Opercular lining dusky.

*Type.*—No. 47742, U.S.N.M. Six specimens, the longest, 115 mm. long, from San Juan Lagoon, south of Guaymas, Mexico.

#### Family CHÆTODONTIDÆ.

**HOLACANTHUS IODOCUS**,<sup>1</sup> Jordan and Rutter, new species.

Head  $3\frac{2}{3}$ ; depth  $1\frac{3}{5}$  (2 in total); eye  $4\frac{1}{5}$ ; dorsal XIV, 20; anal III, 20.

Body very deep, forming almost a regular ellipse, slightly concave above eye and in front of eye. Preorbital, without spine, shorter than width of interorbital, which is narrower than distance between eye and upper end of gill opening. Spine at angle of preopercle straight, longer than orbit, about equal to preorbital; 8 or 9 spines on upper limb of preopercle, these nearly half as long as the one at angle and very much longer than in *Holacanthus ciliaris*; 2 weak spines on lower limb, and 2 on interopercle. Soft dorsal and anal falcate, the longest rays filamentous; pectoral very obliquely rounded, the lower rays scarcely one-third as long as the upper. Ventral slightly filamentous, equal to head. Lateral line regularly arched, but approaching the dorsal outline posteriorly, ceasing before reaching end of dorsal. Scales below lateral line regularly arranged, those above irregular.

*Color (in alcohol).*—Uniform gray (probably orange in life), scales edged with silvery; a very faint, narrow black or dark blue edge to dorsal anterior to filament: terminal half of pectoral, third of caudal, and tips of dorsal and anal behind and including the falcate lobes, yellow; no blue on concave part of dorsal and anal; lips pale, edge of opercle dark blue; a faint indication of a dark blotch in front of dorsal; no blue-black blotch on base of pectoral.

This species differs from *Holacanthus ciliaris* in the elliptical form of the body, in color, and especially in the very long spines on the upper limb of preopercle.

*Type.*—No. 47747, U.S.N.M. A single specimen, 9 inches long, from the Galapagos Archipelago, collected by United States Fish Commission Steamer *Albatross*.

#### Family TEUTHIDIDÆ.

**XESURUS CLARIONIS**, Gilbert and Starks.

(Plate LI.)

Head  $3\frac{1}{2}$  in length to base of caudal; depth 2; dorsal VII, 26; anal III, 22; eye 3 in snout; pectoral 4 in length; ventral 7.

<sup>1</sup> ἰοδόκος, a sheaf of arrows, from the spinous preopercle.

Profile undulating, concave on snout and above eyes, produced before eyes and at occiput: occiput forming a well-rounded angle, behind which the curve of the back is uniform to the caudal peduncle. Teeth in a single row, alike in both jaws, wide and flat; outer margin of each tooth oblique, divided into five rounded lobes; lower jaw included; gill opening equal in length to pectoral; first dorsal spine two-thirds as long as the others, which are subequal; ventral spine extending to middle of vent, half length of soft rays; upper rays of pectoral produced, the fin somewhat acute at tip; posterior margin of pectoral concave; anal slightly higher than soft rays of dorsal, but similar in outline. Body, head, and fins everywhere with a villous covering: three large bony plates near tail, but without recurved spines elevated centrally.

*Color (in alcohol).*—Nearly uniform dark olive-brown, sometimes with a few scattered small round black spots; caudal dark yellowish.

Numerous specimens, 15 inches long, obtained by Dr. Gilbert (*Albatross* collection) at Clarion Island of the Revilla-Gigedo group, Mexico.

This species is much deeper than *Nesurus latidens* as shown in the figure given by Valenciennes, and is without lateral band.

### Family SCORPÆNIDÆ.

#### SCORPÆNA PANNOSA, Cramer, new species.

(Plate LII.)

Head  $2\frac{1}{4}$  ( $2\frac{5}{7}$  in total length); depth 3 ( $3\frac{3}{4}$  in total length); width at base of pectorals 4; width of head over preopercles  $3\frac{3}{4}$ ; dorsal XI, 10; anal III, 5; pectorals 19. Transverse (oblique) rows of scales 25; lat. l. (tubes) about 25.

Body compressed. Caudal peduncle short, its depth a very little less than orbit. Depth and width of head about equal. Orbit high up,  $4\frac{1}{2}$  in head. Interorbital space narrow, 2 in orbit, deeply concave, without prominent ridges. Preocular ridges thick and prominent, with strong spines. Supraocular ridges thin, with blunt spines; postocular spines on rim of orbit, rather sharper; no small spine on rim of orbit behind and external to the postocular; a bifid spine behind middle of posterior rim of orbit, and behind this a thin exoccipital ridge with a blunt spine. A pair of sharp, broadly triangular "coronal" spines with small pits between them and the supraoculars; thin parietal and nuchal ridges of about equal length, with rather blunt spines. Occipital pit of moderate depth, its longitudinal width  $1\frac{5}{7}$  in the transverse width, its anterior side sloping backward, its posterior side sloping slightly backward, forming a shallow pocket in posterior part of pit; the pit is continuous on each side between coronal spine and parietal ridge, with a pit behind postero-superior border of orbit. Nasal spines sharp, strong. Preorbital very broad, with moderate ridges, its inferior border lobate, with one small spine directed forward,

another downward. No pit under orbit, but a broad, shallow depression between orbit and suborbital ridge. Suborbital ridge well separated from eye, equidistant from lower rim of orbit and upper edge of maxillary, and composed of three or four minor ridges, each beginning above the one in front of it, and ending under the one behind it; a single small spine at posterior end of last ridge. Uppermost preopercular spine longest, a little below the line of the suborbital ridge; above its base is a small spine nearly in line with the ridge; second, third, and fourth preopercular spines successively smaller, the fifth obsolete. Opercle with two diverging flat ridges with strong spines. Three thin, sharp ridges on shoulder. First two scales of lateral line with bony keels.

Mouth large, nearly horizontal, wholly below inferior rim of orbit. Maxillary reaching about to posterior margin of pupil,  $2\frac{1}{4}$  in head; jaws equal, the lower without prominent symphyseal knob; broad bands of teeth on jaws, vomer, and palatines. Pseudobranchiae large, reaching down nearly to epiphyal bone. Gill rakers very short, broad, with many minute spines; about 6 developed, the anterior rudiments tending to form a continuous spinous ridge. Scales moderate, mostly cycloid (or very weakly ctenoid?). Vertex, interorbital space, snout, both jaws, and cheeks above suborbital stay, naked; small embedded scales behind orbits, on cheeks below suborbital stay, on base and flap of opercle. Scales on breast small. Anterior nostrils with broad, leaf-like lacinate flaps; preocular flaps minute, supraocular flaps long, more than half orbit, about one-third as broad as long; numerous flaps on back and sides, on opercle, and edge of preopercle and preorbital; a few small ones on cheeks and on eye above pupil; a large, much-incised and divided flap above base of pectoral parallel with edge of opercular flap, its length about  $1\frac{1}{2}$  in orbit. Origin of dorsal opposite upper angle of gill opening; dorsal fin not very deeply notched, the spines only moderately exerted; third and fourth spines equal, about  $2\frac{3}{4}$  in head, the following spines decreasing to the eleventh, which is  $1\frac{1}{3}$  times as long as the first; longest soft rays about equal to longest spines. Caudal truncate or very slightly rounded,  $1\frac{3}{4}$  in head. Second anal spine a little longer than third, about  $2\frac{1}{2}$  in head; soft rays a little longer than second spine, not quite reaching base of caudal. Pectorals about  $3\frac{2}{10}$  in length of body, reaching nearly to origin of anal; the base procurent, its width about  $3\frac{1}{2}$  in head; rays 19, lower 8 simple, slightly exerted and thickened, the next 10 branched, much longer, the uppermost simple. Ventrals reaching only to vent.

General color apparently scarlet; cheeks under orbits mottled with small, dark, mostly round spots; dorsal and pectoral pale, with slight cloudings and small spots of dark; flaps of sides pale or scarlet, caudal with two faint cross bars of dark spots, faint white spots on the lighter bands; no trace of white spots on posterior part of sides, and no trace of dark band across top of caudal peduncle. Axils pale, with apparently 3 or 4 darker spots. A large dark spot on side behind

opercular flap; two narrow dark bands under posterior half of spinous dorsal, reaching on to abdomen, a broader one under soft dorsal. Peritoneum white.

*Type*.—No. 47573, U.S.N.M.

Specimen  $7\frac{1}{2}$  inches long, from Panama, evidently a shore fish. (The name *pannosus*, tattered, refers to the shoulder flap.)

This species is very closely related to *Scorpena histrio*, Jenyns, from which it differs in the following points:

*Scorpena pannosa.*

Nineteen pectoral rays, the lower eight simple, the next 10 branched, the uppermost simple.

Occipital pit deeper behind, its posterior wall slanting backward. Its longitudinal width  $1\frac{1}{2}$  in the transverse width.

Maxillary does not reach posterior border of orbit,  $2\frac{1}{2}$  in head.

Ventral fins reaching only to vent.

Soft rays of anal not quite reaching base of caudal.

Broad flap above base of pectoral much incised and tattered.

Gill rakers fewer, the rudiments on the front part of the anterior limb apparently forming a continuous spinulous ridge.

No small spine on rim of orbit behind postocular spine.

No trace of white spots on posterior parts of sides or of a small dark bar across back of caudal peduncle.

A distinct large dark spot on side behind opercular flap. Pectorals and soft dorsal with very little dark.

General color in alcohol faded scarlet.

Supraocular flap large, more than half orbit.

*Scorpena histrio.*

Twenty pectoral rays, the lower 11 or 12 simple, the next 7 or 8 branched, the uppermost simple.

Longitudinal width of occipital pit  $1\frac{1}{2}$  in the transverse width.

Maxillary reaches beyond posterior border of orbit, very slightly more than 2 ( $2\frac{1}{10}$ ) in head.

Ventral fins reaching beyond vent, about one-third of distance from vent to front of anal.

Soft rays of anal reaching base of caudal.

Broad flap above base of pectoral with a nearly continuous edge.

A small spine on rim of orbit behind postocular spine.

Several white spots on posterior part of sides, and a small dark bar across back of caudal peduncle.

No distinct dark spot on side behind opercular flap. Pectorals and soft dorsal with much dark.

General color in alcohol dark-brown and cherry-red.

Supraocular flap small.

In his original description of *Scorpena histrio* from Galapagos Islands (length, 9 inches), Jenyns gives the following details: Maxillary reaching posterior margin of orbit; small spine on rim of orbit behind postocular spine present only on left side (entirely absent in a smaller

specimen); conspicuous (large) palmated supraocular flaps: eleventh dorsal spine a little longer than the first; 20 pectoral rays, the 10 lower simple, the next 9 branched, the uppermost one simple. His two specimens exactly agree in number of fin rays. The plate accompanying his description (both description and plate based on same specimen) gives the 12 lower pectoral rays simple.

Unfortunately, the writer has had only one specimen of *Scorpaena histrio* from Galapagos Islands and one of *S. pinnosa* from Panama for comparison. It would be very desirable to have a series for comparison in order to determine the amount of variation in the color and in the other points in which the two species differ from each other.

SEBASTODES SEMICINCTUS, Gilbert, new species.

(Plate LIII, fig. 1.)

Very closely related to *S. saricola*, from which it differs conspicuously in its smaller size, its sharply defined cross bars, the smaller head, smaller mouth, and smaller eye, and in the longer and more numerous gill rakers.

Size small, a female with fully developed ova measuring but 130 mm. in total length; our largest specimen, 170 mm. Head  $2\frac{9}{10}$  to 3 in length to base of caudal. Body slender, the depth  $3\frac{2}{5}$  to  $3\frac{3}{5}$  in length. Mandible with a moderate symphyseal knob, which projects to enter the profile. Maxillary scarcely reaching vertical from middle of pupil,  $2\frac{2}{5}$  to  $2\frac{3}{5}$  in head. Eye averaging smaller than in *S. saricola*,  $3\frac{1}{4}$  to  $3\frac{1}{2}$  in head (rarely 3 in head). Interorbital space of moderate width, flat, with a slight median lengthwise groove bounded by a pair of low, rounded ridges, the groove and ridges sometimes not evident. Preocular, supraocular, and occipital ridges low, but sharp and evident, terminating in strong though slender spines. Nasal, preocular, postocular, tympanic, and occipital spines present, the preocular the strongest, directed outward and backward so as to project over the orbit. Parietals not in contact. Preorbital narrow, with two triangular or rounded lobes with or without slight spinous tips. Preopercular spines with compressed triangular base, the upper two usually nearest together, directed backward or slightly upward, the others backward and downward. A subopercular and an interopercular spine closely approximated. Three "humeral" spines. Gill rakers long, slender, very numerous, developed as movable rakers to the extreme anterior end of the arch. Ten or eleven rakers on vertical limb of anterior arch, 27 on horizontal limb, the longest slightly less than half diameter of eye. In *S. saricola*, the gill rakers number 9 or 10 + 22 or 23. D. XII, I, 13; A. III, 7.

Fifth dorsal spine highest,  $2\frac{1}{4}$  to  $2\frac{1}{2}$  in head, longer than the soft rays, the membranes between spines not deeply incised; the notch between dorsals rather shallow, the twelfth spine three fourths to four-fifths length of thirteenth. Caudal emarginate. Second anal spine strong, longer than third, usually not reaching tips of soft rays when



fin is declined; length of second spine half that of head. Ventrals usually reaching to or beyond vent, the pectorals varying from slightly behind vent to slightly behind origin of anal.

Scales on breast cycloid or weakly ctenoid, elsewhere on body rough ctenoid. Head completely scaled, the scales on top of head and on cheeks ctenoid, those on snout, maxillary, mandible, and branchiostegal rays much reduced in size and smooth; 46 to 48 tubes in the lateral line; about 95 vertical transverse series above the lateral line, each series under the dorsal fins containing 7 or 8 scales.

*Color (in alcohol).*—Light brownish above, silvery on lower half of sides and below (tinged with red in life). Snout and top of head dusky; sometimes a dusky streak from tip of snout to eye, a second one crossing between preocular ridges, and a third, less often visible, on occiput. A diamond-shaped brown blotch on the nape and under front of spinous dorsal, extending downward nearly to lateral line. A small blotch under sixth and seventh dorsal spines. A very conspicuous saddle-shaped brown crossbar under the eighth to the eleventh spines; this is wider and lighter next the back, becomes narrower and more intense just above the lateral line, then widens into an intense vertically elliptical blotch on middle of sides. A similar less intense bar under soft dorsal and one on caudal peduncle. The lighter portions of these bars show darker spots and mottlings. Those beneath the fins enroach somewhat on their basal portions. Membranes of dorsal fins with ill-defined roundish spots of light brown. Caudal rays with a few elongate olive-brown spots, some of these often forming a vertical series near base of fin; membranes between the rays largely olive-brown on basal three-fourths of fin. A faint dark spot above middle of base of pectoral. Pectorals, ventrals, and anal white, unmarked. Mouth and gill cavity white; peritoneum brown.

Taken rather abundantly in the Santa Barbara Channel and at first confused with the young of *S. saxicola*, which this species strongly resembles. Specimens before me are from stations 2949 and 2959, in depths of 155 and 55 fathoms.

*Type.*—No. 47581, U.S.N.M.

SEBASTODES AYRESII, Gilbert and Cramer, new species.

Head  $2\frac{2}{3}$ ; depth  $2\frac{1}{5}$ ; dorsal XIII, 13; anal III, 6; lateral line (pores) 42, 44; transverse rows of scales 43.

Very closely related to *Sebastes rosaceus*, but the supraorbital ridge lower, thicker, and without spine. Body oblong, not much elevated, its width about 2 in its depth. Orbit large,  $3\frac{1}{4}$  in head, snout about  $1\frac{1}{4}$  in orbit. Interorbital space concave, 2 in orbit, with a median groove bordered by a pair of ridges diverging backward. Cranial ridges well developed, the preocular, postocular, tympanic, and parietal spines present, sharp. Mouth moderate, jaws about equal, maxillary about  $2\frac{1}{3}$  in head, reaching to vertical from posterior border of pupil;

the lower jaw with a small symphyseal knob. Two upper preopercular spines nearly equal, sharp and long, the third shorter and broad; lower opercular spine horizontal, the upper larger and directed somewhat upward. Gill rakers moderate, the longest about 3 in orbit, 21 on horizontal limb of first arch. Scales moderate, ctenoid; accessory scales numerous; mandiblenaked. Interorbital space, preorbitals, maxillaries, the rays of the dorsal, anal, and caudal fins, and the median rays of the pectorals, scaly. Fourth dorsal ray longest, about  $2\frac{1}{2}$  in head, the twelfth about  $2\frac{1}{2}$  in the fourth; the dorsal rays shorter than the longest spines. Second anal spine much longer and stronger than third, about 2 in head; the rays equal to the second spine. Caudal slightly emarginate. Pectorals moderate, reaching a little beyond vent, the median rays longest,  $3\frac{1}{2}$  in length of body; base of fin a little less than orbit; the 7 lower rays simple, somewhat thickened. Ventral fin reaching vent.

*Color (in alcohol).*—Like *Sebastodes rosaceus*; dark brownish above, paler below. A small pale, pinkish spot immediately under base of fourth dorsal spine, and another small one immediately under base of eighth spine; a third larger spot just above lateral line and under the ninth spine; a fourth spot immediately under the first, and a fifth under the last dorsal rays. Peritoneum dark brown, speckled with black dots.

*Type.*—No. 47744, U.S.N.M.

Taken on a trawl line at Cortez Banks, near San Diego; collected by the *Albatross*. Length, 9 inches.

Distinguished from *Sebastodes rosaceus* especially by the absence of the supraocular spine.

#### SEBASTODES CRAMERI, Jordan, new species.

Head  $2\frac{2}{3}$ ; depth  $2\frac{1}{5}$ ; dorsal XIII, 14; anal III, 7; lateral line (pores) 48 (+1 on caudal); transverse rows of scales, 49.

Body compressed, its thickness  $2\frac{1}{4}$  in its depth. Interorbital space flat,  $4\frac{1}{2}$  in head; cranial ridges low but evident, the parietal ridges thin. Preocular, supraocular, postocular, tympanic, parietal, and nuchal spines present, the last-named spines being marked off from the parietal ridges only by depressions, and the parietal spines not well marked. Orbit nearly circular,  $3\frac{1}{5}$  in head. Snout about equal to interorbital width; preorbital with two triangular lobes, but no distinct spines. Maxillary reaching a little beyond vertical from middle of eye,  $2\frac{1}{3}$  in head. Mandible scarcely projecting, with a small, symphyseal knob. The three upper preopercular spines nearly equal, a little divergent, the lowest one obsolescent. Opercular spines moderate, nearly equal. Gill rakers slender,  $2\frac{2}{3}$  in orbit, 21 on horizontal limb of first arch. Scales of medium size, those on opercles and cheeks ctenoid, those on snout, preorbital, maxillary and mandible scarcely ctenoid; accessory scales in moderate number. Dorsal spines rather low, the fourth longest,  $2\frac{2}{3}$  in head, the twelfth about half as long; the membrane of spinous

dorsal rather deeply incised; longest dorsal rays about equal to longest spines. Second anal spine about equal to the third, but stronger, curved, 3 in head, about  $1\frac{1}{2}$  in soft rays. Caudal emarginate. Base of pectoral  $2\frac{2}{3}$  in head, the 10 lower rays simple, the middle rays longest,  $3\frac{2}{5}$  in length of body, and reaching a little beyond origin of anal; ventrals reaching a little beyond vent.

*Color (in alcohol).*—Yellowish, darker above (doubtless bright red in life); 4 short, faint cross bands on upper part of sides, one under second, third, and fourth dorsal spines, a second under sixth and seventh spines, a third under ninth, tenth, and eleventh spines, and the fourth under the soft dorsal; a black spot on upper part of opercle; membrane of spinous dorsal, black-edged. Dorsals and pectorals a little dusky, fins otherwise pale. Inside of mouth a little dusky at the sides and in front of tongue; lining of gill cavities dusky in front of pseudo-branchiae. Peritoneum, dark brown.

*Type.*—No. 47745, U.S.N.M.

A single specimen, taken by the *Albatross* at station 3091, 87 fathoms, off Tillamook, Oregon.

It is named for Mr. Frank Cramer, of Leland Stanford Junior University, in recognition of his work on the genus *Sebastodes*.

#### Family TRIGLIDÆ.

##### PRIONOTUS LOXIAS, Jordan, new species.

Head  $2\frac{1}{2}$ ; depth  $3\frac{1}{2}$ ; dorsal X-10 or 11; anal 10; scales about 50.

Body stout; head large, rough; mouth moderate, maxillary not reaching front of orbit,  $2\frac{2}{3}$  in head; eye large,  $3\frac{3}{4}$  to 4 in head; snout  $2\frac{1}{2}$  in head; opercular spine strong, nearly as large as preopercular spine; humeral spine small, not half as large as either of the others; inter-orbital area narrow, concave, its width  $2\frac{2}{3}$  in eye; preopercular spine without smaller one in front; no spine at center of radiation of cheek; preorbital edge prominent, finely denticulated; supraorbital ridge prominent, with a bluntish spine before and behind; a transverse groove on head behind eye; snout broad, slightly emarginate at tip, the rostral plates not much projecting, their edges sharply and finally serrate, with 10 to 12 serræ; occipital ridges a short distance behind supraorbital ones, ending each in a bluntish spine, as do also the nuchal ridges. Teeth on jaws, vomer, and palatines in bands; lower jaw included; base of mandible below front of orbit. Bones on cheeks and opercles with strong striae, the rest of the bones of the head roughish. Gill rakers short, about 10 below the angle, the anterior ones tubercle-like; breast closely scaled. Pectorals short,  $3\frac{1}{4}$  to  $3\frac{1}{2}$  in the length of body, scarcely longer than longest detached ray, their tips reaching about third ray of anal fin, their length  $3\frac{1}{2}$  in the body; ventrals long, their tips almost reaching tips of pectorals,  $1\frac{2}{3}$  in head; first dorsal spine the longest, its length  $1\frac{1}{5}$  in head, serrate in front; first dorsal ray slightly serrulate at

base, its length 3 in head; longest anal ray 4 in head; caudal fin lunate, with pointed lobes,  $1\frac{3}{4}$  in head.

*Color*.—Brownish above, grayish below; head and anterior parts more or less distinctly vermiculated with dark olivaceous, these markings especially distinct on bones of head; sides with 6 to 15 narrow brown oblique bands extending downward and backward from the lateral line about halfway to anal fin, these obsolete or less conspicuous on anterior portion of the body; both dorsals mottled with olive; caudal with 3 broad, blackish bars which do not cross the upper and lower ray, the last bar broad and very conspicuous; upper ray of caudal dark olive; no black spot at base of caudal; anal and ventrals white; pectorals blackish, faintly barred with darker and margined with white.

Here described from many specimens, 3 to 6 inches long, from station 2805, Bay of Panama,  $51\frac{1}{2}$  fathoms, where it occurs with *Prionotus venisima*, but more abundantly than the latter. It has not yet been seen elsewhere.

*Type*.—No. 47580, U.S.N.M.

### Family URANOSCOPIDÆ.

**ASTROSCOPUS ZEPHYREUS**, Gilbert and Starks, new species.

(Plate LIII, fig. 2; also Plate LIV.)

Head  $2\frac{2}{3}$ ; depth  $3\frac{2}{5}$ ; dorsal V-13; anal 14; scales 84; eye 12 in head; maxillary  $2\frac{3}{4}$ ; pectoral  $1\frac{1}{4}$ ; second dorsal spine 7; highest dorsal ray  $2\frac{3}{4}$ ; highest anal ray  $3\frac{1}{6}$ ; caudal  $1\frac{3}{4}$ .

Body robust, widest at occiput, slightly compressed posteriorly, anteriorly subcylindrical. Head very large and broad, wider than the body; mouth large, vertical, a fringe of barbels curving over mouth on each jaw, their length a little greater than the diameter of the eye; tongue very large and fleshy, forming a pad under the membrane of lower jaw, which projects forward somewhat; teeth conical, small and movable, in many bands in upper jaw; in lower jaw the teeth are larger and in two or three rows; vomer and palatines with teeth. Eyes very small but prominent; interorbital very wide, four times as wide as the eye; bones on top of head coarsely granular; Y-shaped ridge on top of head conspicuous, with a broad naked area on each side; the form of these and other bones of the head exactly as in *A. y-gracum*; edges of nostrils closely fringed; anterior nostril round, the ridge between it and eye not very high or conspicuous; posterior nostril ending in a long curved furrow which runs obliquely across the naked area behind eyes; at its posterior end it turns sharply forward, its length  $2\frac{2}{3}$  times the diameter of the eye; two very short blunt spines in front of eye; surface of the opercle, preopercle, and humeral process granular, not so rough as in *A. y-gracum*; gill rakers not developed; pseudo-branchiæ very small.



Head entirely scaleless; belly naked below a line drawn from first anal ray to the middle of pectoral base; fins without scales; scales small and nearly square, grown together side by side, forming oblique series.

Width of pectoral at base slightly less than half length of head; the fin is pointed and slightly turned up, its tip reaching to the vertical from base of the third dorsal ray; the ventral rays are thick and swollen, the inner rays the longest, the fin reaching almost midway between its base and tips of pectorals; insertion of ventrals in front of pectorals a distance equal to the width of pectoral base; soft dorsal somewhat higher than anal, its posterior rays reaching to the vertical from base of last anal ray; tip of last anal ray nearly reaching to the base of caudal rays; caudal truncate or slightly rounded; a fold of skin along middle line of belly from ventrals to vent.

*Color*.—Dark brown above, paler below; upper parts with many round white spots of various sizes, edged with rings of dark brown; spinous dorsal black, light posteriorly; soft dorsal light at base, the ends of the rays with black and white stripes; pectorals and anal dusky with light edge, caudal with longitudinal black and white stripes.

*Type*.—No. 47743. U.S.N.M.

A single specimen, 12 inches in length, collected by the *Albatross*, in Magdalena Bay, Lower California.

A distinct electric shock was given by this fish when alive, the electric organs being apparently located in the fleshy areas on top of head behind the eyes.

### Family BLENNIIDÆ.

#### EMMNION,<sup>1</sup> new genus.

#### EMMNION BRISTOLÆ, Jordan, new species.

(Plate LV, fig. 1).

Head  $5\frac{2}{7}$ ; depth  $7\frac{1}{2}$ ; dorsal XXV, 13; anal I, 27; pectoral 13; ventral I, 3; Branchiostegals 5; scales 3-63-11, the count not certain.

Body slender, moderately compressed; the dorsal profile forming a nearly straight line from occiput to first dorsal ray, from thence descending very gently to base of caudal; ventral profile about straight. Head broad, slightly convex above, its width  $1\frac{1}{2}$  in its length. Anterior profile from first dorsal spine to a point above eye straight, thence abruptly descending to tip of snout. Mouth horizontal, the lower jaw included. Maxillary reaching nearly to posterior margin of eye, about  $2\frac{1}{2}$  in head. Teeth present on both jaws, canine-like; upper jaw with 8 enlarged teeth in front, about 2 or 3 series of much smaller teeth behind these, only 1 series of which extends into posterior region of mouth; lower jaw with a series of teeth in front and on sides which become greatly enlarged in front; a patch of very small teeth behind the enlarged

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<sup>1</sup>*Ev*, in; *μνιον*, sea moss, or alga.



front teeth. No teeth on vomer or palatines. Premaxillaries very protractile. Snout blunt,  $4\frac{1}{6}$  in head. Eyes large, round, placed close together,  $3\frac{1}{4}$  in head. Interorbital region very narrow, less than pupil. Nostrils equal. Caudal peduncle  $2\frac{1}{5}$  in head. Branchiostegal membranes deeply united, free from isthmus. Gills 4, a small slit behind the fourth. No cirri above eyes, nor filaments on nape. Head naked; body covered with cycloid scales, those on nape much smaller; belly naked.

The scales on the body are apparently caducous, as all have fallen, but the impressions are very distinct; they seem to have been embedded on their anterior edge, as the sac-like fold of skin is prominent. Lateral line simple, straight, running from upper edge of gill opening to last ray of dorsal when it disappears, not reaching the caudal. It is placed very high, and gradually approaches the dorsal fin, from which it is separated only by a very small distance. Dorsal extending from a point a short distance behind occiput nearly to base of caudal; the fin is emarginate, with the last spine shortest, about  $2\frac{1}{4}$  in first soft ray, the latter  $2\frac{1}{7}$  in head; longest dorsal spines about 3 in head, all the spines slender and flexible. Anal extending from behind vent nearly to base of caudal; similar to soft dorsal, its rays lower. Ventrals well developed, inserted very slightly in front of base of pectorals, with broad base, the rays thickish. Length of ventrals  $1\frac{1}{3}$  in head, the fin reaching three-fifths the distance to vent. Caudal subtruncate. Pectorals reaching past vent, about as long as head. Dorsal and anal free from caudal.

*Color (in alcohol).*—Dark reddish brown, lighter below; head very dark. Dorsals, pectorals and caudal blackish, pectorals and caudal with lighter blotches; anal and ventrals dusky, anal margined with darker. Length about 3 inches. Here described from a specimen taken by the *Albatross* from Galapagos Islands.

*Type.*—No. 47578, U.S.N.M.

It is evidently a rock-pool species. The species is named for Miss Susan Brown Bristol, of the department of zoology in Stanford University, in recognition of her work on fishes. It is the type of a distinct genus (*Emmnion*), remotely allied to *Labrosomus* and *Pseudoblennius*, distinguished especially by its straight dorsal lateral line ending at base of last dorsal ray, by its scaly body, and by its dentition. Its relations to any other American genus are not intimate.

### Family XIPHIDIONTIDÆ.

#### ULVICOLA, new genus.

ULVICOLA SANCTÆ-ROSÆ, Gilbert and Starks, new species.

(Plate LV, fig. 2.)

Head 10 in body; depth 13; dorsal XCVII; anal I-40; eye  $4\frac{1}{2}$  in head; caudal  $1\frac{1}{2}$ .

Body elongate as in *Xeropes*, strongly compressed, upper profile of head slightly convex, no constriction at nape; mouth very small, oblique, the maxillary reaching about to front of eye; teeth very small, in a single row on jaws; vomer with teeth; interorbital a narrow sharp ridge; snout about equal to length of eye; gill opening short, limited to the part below angle of opercle, adnate above to shoulder girdle. Origin of dorsal above upper end of gill opening, much nearer occiput than tip of snout; anal spine small, not channeled as in *Xeropes fuco-rum*; origin of anal nearer base of caudal than tip of snout by a distance equal to twice length of head; pectorals and ventrals obsolete; caudal rather long, confluent with dorsal and anal.

*Color (in alcohol).*—Light brown, slightly lighter under head and on belly; no markings.

*Type.*—No. 47579, U.S.N.M.

Specimen  $4\frac{1}{2}$  inches in length; collected by the *Albatross* in a rock pool at Santa Rosa Island, California, January 6, 1889.

The new genus *Utricola* is allied to *Xeropes*.

#### Family BLENNIIDÆ.

EMBLEMARIA OCULOCIRRIS, Jordan, new species.

Head  $3\frac{3}{4}$ ; depth  $6\frac{2}{3}$ ; dorsal about 35; anal 25.

Upper part of eyeball with a slender cirrus tipped with black, this nearly as long as eye; eye longer than snout, about  $3\frac{3}{4}$  in head, the maxillary extending to below posterior part of pupil; snout sharper than in *Emblemaria nripes*, two-thirds eye; teeth small, rather sharp, directed backward; longest dorsal spine as long as head; pectorals  $1\frac{1}{2}$  in head; ventrals  $1\frac{2}{5}$ , inserted before pectorals.

*Color (in alcohol).*—Brown, with traces of about 9 blackish cross bars, which are separated on the back by whitish quadrate interspaces; a white spot at nape; some dusky below eye; dorsal dusky, the pale bars of back extending on its base; anal dusky; ventrals blackish; caudal pale, its tip black; pectorals pale.

*Type.*—No. 47749, U.S.N.M.

Specimen  $1\frac{1}{2}$  inches long; collected by the *Albatross*, La Paz, California. It seems to be very close to *Emblemaria nripes*.

#### Family GADIDÆ.

LEPIDION VERECUNDUM, Jordan and Cramer, new species.

Head  $3\frac{1}{2}$ ; depth  $4\frac{1}{4}$ ; dorsal VIII-40; anal 37; ventral apparently 4 (some rays broken on each side); scales about 75, not to be exactly counted.

Body robust, compressed, tapering from the large head to the very slender, attenuate tail, which is not so broad as pupil. Head large, not greatly compressed, not keeled above, its sides scaly; lower jaw

with some scales; interorbital space depressed,  $5\frac{3}{4}$  in head. Eye very large (in young),  $2\frac{2}{3}$  in head; snout short, depressed, not pointed, and with lateral keel,  $5\frac{3}{4}$  in head. Preorbital very narrow. Mouth rather large, oblique, the maxillary reaching to below front of pupil,  $2\frac{2}{3}$  in head; lower jaw slightly longer, its tip with a stiffish pointed projection representing the barbel; teeth small, in bands, a few on vomer. No spines on snout or opercles. Gill membranes somewhat united, free from isthmus. Gill rakers slender, rather long, 10 to 12 on lower part of arch. Scales very small, mostly lost posteriorly and not to be exactly counted. Lateral line not evident. First dorsal rather low and long, none of its rays produced, the longest about half head. Ventrals filamentous, half head; pectorals about half head; caudal  $2\frac{1}{2}$  head; anal deeply notched behind the middle, its posterior lobe highest.

Color uniform purplish black, the fins paler.

*Type*.—No. 47748, U.S.N.M.

Young specimen,  $2\frac{1}{4}$  inches long, from *Albatross* station 2993, in 364 fathoms, near Clarion Island of the Revilla-Gigedo group, Mexico.

#### Family PLEURONECTIDÆ.

PARALICHTHYS WOOLMANI, Jordan and Williams, new species.

Head  $3\frac{1}{2}$ ; depth about 2 in length of body; gill rakers 5+11; dorsal 74; anal 57; pectoral 12; ventral 6.

Flesh firm. Body oblong; mouth large, mandible heavy, not projecting; about 8 teeth on each side of lower jaw, the anterior ones long but slender; teeth in upper jaw smaller than those in lower jaw; the lateral teeth very small and close set. Eye small,  $5\frac{1}{2}$  in length of head; interorbital area moderately prominent, narrow, about two-fifths in length of eye. Scales cycloid, small anteriorly and increasing in size posteriorly, covering head and fins; about 100 on lateral line. Lateral line greatly arched anteriorly, the arch about  $3\frac{1}{2}$  times in length of straight portion. Gill rakers slender, the longest about one-half length of eye. Pectoral and ventral fins small; pectoral about one-half length of head. Origin of dorsal opposite anterior margin of eye; caudal ending in an obtuse angle, not double concave; caudal peduncle wide. Anal spine obsolete. Body and fins blotched with deep brown and pearly white and speckled with very dark brown, blotches more definite on median fins and especially on caudal where there are three indefinite lines of blotches crossing the skin.

*Type*.—No. 47575, U.S.N.M.

Specimen  $9\frac{1}{2}$  inches long, taken at the Galapagos Islands by the *Albatross* in 1888. It was then thought to be *Paralichthys atspersus*, from which species it differs but little except in the number and length of the gill rakers.

This species is named for Mr. Albert J. Woolman, of Duluth, Minnesota, in recognition of his work on the fresh-water fishes of Mexico and Florida.